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ABSTRACT

Causes and expressions of alcohol abuse in both men and women were examined in this study. Subjects (N=365 women and N=1,657 men), all of whom were first admissions to the Alcoholism Division of the Denver Fort Logan Mental Health Center, described their drinking symptoms and behavior patterns after excessive drinking. Over 60 symptoms were considered and then clustered by factor analytic procedures. Results indicated that: (1) empirically determined clusters in women are similar to clusters determined independently in men as are clusters determined in a single subject sample; (2) only eight distinct categories of drinking symptoms are required for a complete nosology of alcoholism; and (3) in some major respects alcoholism in women is not different from alcoholism in men, except in the expression of much greater anxiety about drinking by alcoholic women. (HLM)

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SESSION D

WOMEN ALCOHOLICS

Mark Keller, *Chairman*

FEMALES ARE DIFFERENT: ON THE DIAGNOSIS OF ALCOHOLISM IN WOMEN

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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INTRODUCTION

There are compelling reasons to suppose that alcoholism in women is quite different from alcoholism in men. Research findings, as well as clinical observations, indicate that the reasons women drink, and drink to excess, are often quite different from the reasons men drink and drink to excess (Jellinek 1952; Jessor et al. 1968; Johnson 1965; Mulford and Miller 1960; Wood and Duffy 1966). We know that even today the proportion of women who drink is smaller than the proportion of men who drink; and of those who drink, women drink less frequently than men and consume less alcohol when they do drink (Cahalan and Cisin 1968; Cahalin, Cisin and Crossley 1970; Knupfer et al. 1963; Mulford 1963). Women appear less often for treatment of problems associated with drinking: In this country, for every woman who seeks help for problems explicitly related to the use of alcohol, there are five to six men seeking this kind of help (Cahalan and Cisin 1968; Cahalan et al. 1970; Knupfer et al. 1963; Keller and Efron 1955). These facts, as well as common sense and clinical observation, make a strong case for the argument that the causes and expression of

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alcohol abuse in women are different in major respects from the causes and expression of like behavior in men.

Because there is this rather strong argument for gender differences in alcoholism, we were particularly interested, and rather surprised, to find in one of our recent studies (Wanberg and Horn 1970) that empirically determined clusterings of commonly reported alcoholism symptoms were quite similar when independently determined in samples of men and women. Over 60 symptoms were considered. The clusterings of symptoms were determined by factor analytic procedures. The samples were of substantial size: 365 women and 1657 men, all first admissions to the Alcoholism Division of the Fort Logan Mental Health Center in Denver. The simple-structure solutions were determined analytically, independently and objectively (as specified by Horn 1967). Yet the similarity of the two solutions was striking. This can be appreciated by inspecting tables 1 through 8, which provide a summary of the major results from the Wanberg-Horn study. In these tables it can be seen that the first five factors, particularly, involve practically the same salient symptoms in the two samples. The degree of similarity of these two sets of factors is comparable to the degree of similarity of factor solutions derived from a single sample of subjects but rotated by somewhat different procedures designed to achieve simple structure (see Horn 1963). In other words the empirically determined symptom clusters in women are as similar to clusters determined independently in men as are clusters determined in a single subject sample by somewhat different, but well regarded, mathematical procedures designed to achieve the same objective.

The factors of tables 1 through 8, and the fact of their independence, means that the people who enter an alcoholism treatment center such as the one at Fort Logan can be classified in accordance with eight distinct types of symptoms pertaining to drinking. This does not mean that an eight-category classification system is exhaustive—that only eight distinct categories are required for a complete nosology of alcoholism. But the fact that the eight factors account for a major proportion of the reliable variance of over 60 alcoholism symptoms, selected to represent the domain of such symptoms, means that eight categories will go a long way toward describing the problems pertaining to drinking about which people can be candid when they enter an alcoholism treatment facility. The fact that these factors appear in very similar form in separate samples of males and females suggests that in at least eight ways men and women conceptualize their problems about the use of alcohol in much the same way. In some major respects, then, alcoholism in women is not different from alcoholism in men.

This statement needs to be qualified in several ways. A major purpose of the present report is to describe some of the more important provisos to such a statement, insofar as we have learned about these from our studies at the Alcoholism Division of the Fort Logan Hospital. In the process of examining these provisos we hope to provide, also, an improved description of basic categories that very likely will be needed for a comprehensive nosological system of diagnosis of the psychopathologies of alcoholism.

EIGHT BASIC DIMENSIONS: SIMILARITIES AND DIFFERENCES IN MEN AND WOMEN

Classical Syndrome Alcoholism

The major symptom cluster found independently in a sample of 365 women and in a sample of 1657 men is shown in table 1. This factor represents the major source of variance among 69 symptoms to which patients were asked to ascribe when they were admitted for treatment. It can be seen that the symptoms characterizing this factor represent what is recognized clinically as severe alcoholism. Symptoms such as "Can't stop after one or two drinks," "Drink, sober up, drink again," and "Drink before breakfast" indicate loss of control. Other symptoms indicate neglect of personal hygiene and social responsibilities, as in failure to eat properly, little sleep, missing work, and loss of employment because of drinking. There is evidence of physiological reactions which commonly have been attributed to prolonged heavy drinking, as blackouts and the "shakes." And there are symptoms suggesting the phenomenological reactions often associated with self-perceptions that drinking has become a severe problem—such as "Afraid to go outside," "Afraid drinking is getting worse" and "Frightened by blackouts." Thus, the factor is well described as a broad-severity dimension of alcoholism. We will refer to this as the classical conception of alcoholism.

The fact that a large proportion of the reliable variance among all symptoms is accounted for by this factor means that there are wide, quite reliable individual differences measured along this dimension of severity—that some incoming patients report few of the symptoms of the factor, some report an intermediate number and some report many. The fact that the dimension is independent of other factors means that the symptoms of this factor appear together and disappear together, and that knowing that a patient reports many, few, or an intermediate number of these symptoms provides little basis upon which to predict that the patient will

Table 1.—Drinking symptoms factor I: classical syndrome (congruence .82)

Variable number	Variable description	Coefficient		
		Women	Men	Diff.
A. Salient for women and men				
*34	Have shakes after bout	64	46	18†
*31	Miss work when drinking	63	48	15†
*20	Don't eat when drinking	62	51	11
*10	Drink in morning to relieve hangover	60	59	01
* 9	Can't stop after 1 or 2	59	61	−01
*38	Little sleep when drinking	52	50	02
37	Have fears after bout	48	47	01
45	Drink before breakfast	46	49	−03
*53	Have lost employment because of drinking	46	37	09
17	Have had blackouts frequently with drinking	45	43	02
* 7	Drink much spirits alcohol	43	31	12
60	Interviewer judgment that questionnaire answers are forthright	42	40	02
*47	Have long blackouts	40	41	−01
56	Afraid to go outside	40	37	03
48	Frightened by blackouts	38	37	−01
14	Drink, sober up, drink again	35	32	03
39	Afraid drinking getting worse	33	58	−25†
11	Drink every day	32	33	−01
B. Salient for women only				
36	Have had delirium tremens	36	23	13
C. Salient for men only				
40	Want to stop drinking	18	43	−25†
23	Drink to feel superior	22	33	−11
16	Resent others' comments about drinking	11	33	−22†
D. Other significant (above .2) correlations for women				
15	Ashamed of conduct when drinking	20	12	08
26	Have sought help frequently	28	01	27†
29	Marital problems over drinking	22	13	09
46	Remorseful about drinking	22	23	−01
50	Have asked for help before	28	13	15†

*Combined in weighted composite to measure factor.
†Difference in factor coefficients significant at the .01 level.

report many, few or an intermediate number of the symptoms characterizing other factors.

The form of the factor is very similar in men and women. Of the 23 symptoms which characterize the factor, 19 have loadings above .30 in both samples (men and women) and the remaining 4 correlate in the same way, in most cases significantly, with the factor in both samples, of the 19 symptoms that are salient in the

factor in both samples, 17 have factor coefficients that differ by no more than .15, and in 12 cases the coefficients differ by no more than .03. Thus, the symptoms that go together to describe broad severity in women are, for the most part, the same symptoms that go together to describe broad severity in men.

But women are different in respect to this factor. They are different, first, in respect to the relative frequency with which some symptoms are reported when other symptoms of the same pattern are reported. This is indicated by the differences for some symptoms in the factor coefficients obtained in the sample of women as compared with the corresponding coefficients obtained in the sample of men. For example, symptom 34, at the top of the list in this factor, correlates .64 with the factor in the sample of women but correlates only .46 with the factor in the sample of men, the difference between the two correlations being significant at well beyond the .01 level using Fisher's (1915) r to Z transformations and tests.[1] In more practical terms this means that of the women above the median of all women in their scores on this factor, roughly 42 per cent report having shakes after a drinking bout, whereas of the men above the median of men in this factor, only about 37 percent report having this symptom. Looked at from the other side, the difference between the correlations means that of the men scoring below the median in this factor, about five percent more report this symptom than do the women who score below the median. In general, then, the symptom is more indicative of severity in women than in men, the index of this being a hit rate in predicting the syndrome, given the symptom, that is better by about 10 percent.

This kind of reasoning may help in understanding other differences in the symptom patterns of men and women. For example, the fact that the symptom "Afraid drinking is getting worse" correlates .58 with the factor in the sample of men and only .33 in the sample of women (the difference being significant at well beyond the .01 level), indicates that whereas about 40 percent of the men who score above the median for men in the sample report having this symptom, only about 32 percent of the women above the median (for women) report the symptom. For those scoring below the median in the factor, the differences are comparable but in the reverse direction. Thus, the difference in hit rate is about 15 percent.

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1. With samples of 365 and 1657 the standard error of the difference between two transformed Z values is 0.0578. For correlations of the order of .60 and .50 a difference of only about .12 yields a normal deviate of 3.0 and thus is significant, by a two-tailed test, at the .01 level.

Other differences of this kind indicate that women who score high in this broad-severity dimension are more likely than men to report having delirium tremens and missing work on account of drinking, whereas men are more likely to report resentment at others' comments about drinking, that they want to stop drinking, that they drink to feel superior, and that they are afraid their drinking is getting worse.

These various differences indicate that women who report symptoms which characterize the classical conception of alcoholism are more likely than men to include such classical symptoms as delirium tremens and the shakes, whereas men who describe themselves in accordance with the classical conception are more likely than women to confess fear that the problem is getting worse, to avow a desire to stop, and to complain about the meddling by others.

But women also differ from men in respect to what can be referred to as level on this factor. Factor scores were obtained by combining the item scores for each of the items marked with an asterisk in table 1, the item score first being multiplied by a weight proportional to the item's correlation with the factor. The mean value of these factor scores was then calculated for each sample and the difference between these means was tested for significance. Table 9 provides the results from analyses of this kind carried out with respect to the six factors that are most comparable in factor loading pattern for the two samples.

The mean for women on factor I is significantly smaller than the mean for men. This is true even though the male-female differences in endorsements of individual symptoms of the factor are not, in general, significant. In a study by Wanberg and Knapp (1970), it was found that only one of the nine symptoms used in the scoring of factor I was endorsed significantly more or less often by women than by men: men more frequently reported that they had lost a job because of their drinking. The present results thus indicate that although there are only insignificant differences between men and women in the rate of endorsement of individual symptoms, these differences accumulate systematically in the expression of the classical syndrome: adding over the nine major symptoms of the factor, women report fewer of the classical symptoms than do men. Considered in another way, these results suggest that although women conceptualize the classical syndrome in much the same way as men do, they score lower, on the average, in this expression of severity of alcoholism.

One interpretation of this finding is that on the average the condition of alcoholism represented by factor I is less pronounced

in women than in men. This interpretation needs to be conditioned by an awareness that severity is here expressed subjectively, through the self-reports of patients, not objectively, as for example in physiological deterioration. Even so, it can be argued that phenomenologically, and in this sense psychologically, the subjective expression of severity is a valid indication of the psychiatric problems needing treatment, and in this sense our female first admissions, on the average, have a less severe problem for treatment than do our male first admissions.

It should be noted in this respect that although women start drinking later than men do, and presumably therefore develop alcoholism at a later age, the mean age of first admission at the Fort Logan Center is practically the same for men and women. Thus, our findings in regard to the severity dimension can be interpreted as indicating that women come to the hospital at an earlier stage in the development of classical symptoms of alcoholism than do men.

We shall see that these kinds of interpretations can also be applied to help explain some of the findings obtained with other factors that are similar in men and women.

Physiological Reaction

Perhaps the most important thing about factor II (table 2) is that it is found in company with, and therefore pertains to an influence that is independent of, the broad severity represented by factor I. For it, too, contains many of the symptoms which have been described in the clinical literature as indicative of advanced-stage alcoholism. It contains particularly the symptoms which have been accepted as indicating physiological anomalies induced by excessive alcohol intake—blackouts, delirium tremens, and convulsions. It lacks, however, the confessional quality of factor I. That is, it does not contain many of the symptoms which suggest self-recrimination or eagerness to be regarded as having an extreme form of alcoholism. Yet the interviewer who administered the symptoms questionnaire tended to rate the persons scoring high on this factor as being at a low-bottom stage of alcoholism. It seems that the factor represents a form of alcoholism that is so confirmed and so extreme that the patient sees little need to prove the point by reporting symptoms such as "Afraid drinking is getting worse" or "Can't stop after one or two drinks." It is noteworthy, too, that the factor contains the symptom "Have frequently taken alcohol substitutes." This may explain, in part, why symptoms such as "Drink every day" or "Drink before breakfast" are not prominent in the factor. The person scoring high in the factor is apparently

Table 2.–Drinking symptoms factor II: physiological reaction (congruence .84)

Variable Number	Variable description	Coefficient		
		Women	Men	Diff.
A. Salient for women and men				
*36	Have had convulsions	65	59	06
* 8	Have frequently taken substitutes	64	34	30†
*36	Have had delirium tremens	62	64	−02
* 5	Drink much wine	50	58	−08
*17	Have had blackouts frequently with drinking	42	36	06
61	Interviewer's estimate of low bottom alcoholism	33	45	−12
C. Salient for men only				
1	First drink was spirits alcohol	08	36	−24
30	Live alone	12	38	−26†
56	Afraid to go outside	16	33	−17
65	Do not live with spouse	−01	31	−32†
47	Have long blackouts	25	30	−05
D. Other significant (above .2) correlations with factor in women				
3	Young age at first intoxication	29	11	18†
18	Many days on last binge	21	15	06
38	Little sleep when drinking	21	17	04
49	Have long drinking bouts	21	26	05

*Combined in weighted composite to measure factor.
†Difference significant at the .01 level.

using agents other than alcohol to bring about the escape or the other needed effects which can be induced by consumption of alcohol and thus is not using alcohol as regularly as are some others.

Although six of the salient symptoms in factor II are the same in women and men, and the pattern congruence in the two samples is slightly higher for this factor than for factor I, the factor, nevertheless, appears in the men with a somewhat broader range of highly correlated symptoms than is found in the women. Also, there are several noteworthy differences in magnitude of the correlation between a given symptom and the two forms of the factor. Together, these differences suggest that among women factor II is characterized by the taking of substitutes, perhaps often physician-prescribed tranquilizers, whereas in men it is characterized by symptoms indicating that the person lives alone and is afraid to go out. It is interesting that in both samples the symptom "Drink much wine" has a salient correlation with the factor. Over-all, then, whereas this factor seems to represent what has been

referred to as a bottom-level "wino" form of alcoholism, sometimes almost equated with simple schizophrenia (because the person who evinces the pattern is also found to live as a hermit), this description would seem to apply primarily only to a manifestation of the pattern in men. In women, wine drinking and the bottom-level physiological symptoms of the factor are not significantly correlated with isolate living conditions or absence of spouse, but seem instead to be most highly related to the use of alcohol substitutes.

From table 9 it can be seen that the mean score on factor II is significantly lower in women than in men. Also, as in the case of factor I, the gender differences for the individual symptoms of the factor are not significant. In this case not one of the salient symptoms, considered separately, is significantly more or less characteristic of women than of men. Thus, here too, it is only in an aggregate of symptoms that men show a more extreme form of alcoholism. As was indicated in interpretations of the findings on factor I, this may reflect the fact that women present themselves for treatment at an earlier stage in the development of alcoholism than men do.

Gregarious Drinking

Factor III does not so much represent a form of alcoholism in the sense of a pattern of effects produced by alcohol as it indicates a reason for drinking or a style of alcohol consumption. It is important to remember that the influences represented by this factor operate independently of those producing factors I and II and the other factors. In practical terms this means that being gregarious in style of drinking is associated about as frequently with high as with low scores on the broad-severity or physiological-reaction dimensions.

Looking at factor III from one end it is seen to be characterized by items indicating sociable drinking away from the home, with friends and acquaintances. Men who are well described by this factor tend to drink much beer and to encourage their spouses to drink with them, but this is not so characteristic of women who are well described by the same factor. On the other hand, women who report that they drink for gregarious reasons also report that they have a drinking bout every few days, whereas this is not very characteristic of the pattern in the men. Looked at from the other end, the factor represents solitary drinking.

This is the only one of the eight drinking-symptom factors which has a consistent and significant relationship to aging in cross-sectional analyses. In both samples, men and women, as age

Table 3.—Drinking symptoms factor III: gregarious drinking (congruence .72)

Variable Number	Variable description	Coefficient		
		Women	Men	Diff.
A. Salient for women and men				
* 4	Do not drink alone	78	59	19†
*63	Do not drink at home	43	49	−06
*21	Drink helps me to make friends	33	59	−26†
B. Salient for women only				
19	Few days between drinking bouts	51	12	39†
C. Salient for men only				
* 6	Drink much beer	19	55	−36†
28	Encourage spouse to drink with me	18	42	−24†
7	Drink little spirits alcohol	27	34	−07
D. Other significant (above .2) correlations with factor in women				
13	Drink on weekends only	24	01	23†
16	Do not resent others' comments about drinking	21	01	20†
22	Drink helps me relax	29	25	04
42	Young age	29	23	06
51	Spouse drinks with me	23	20	03

*Combined in weighted composite to measure factor.
†Difference significant at the .01 level.

increased from 20 to 55 years, scores on this factor decreased, drinking became more and more solitary.

It can be seen in table 9 that the difference between the mean scores of men and women on this factor is clearly significantly larger than zero. Men score high on the gregarious end of the factor; women tend to be solitary drinkers. Moreover, somewhat in contrast to factors I and II, three of the symptoms of this factor, when considered separately, show a significant difference between men and women. Of these, "Drink at home" shows the largest difference, followed by "Drink (little) beer" and "Drink alone"—i.e., women more often than men report that they drink at home, consume little beer and drink alone. It should be kept in mind, however, that although women who are well characterized as being gregarious drinkers are less likely to drink beer, or to drink much of this beverage, than men who are well described by this factor, these women will more often drink beer, and drink much of it, than those women who are not well described as gregarious drinkers. Nevertheless the results in general support the claim that men tend to be gregarious drinkers and women, relatively more frequently, solitary drinkers.

Steady, Long-Binge Drinking

The symptoms of factor IV define a sustained, steady pattern of drinking. It is well to note that of the persons scoring high on factors indicating severe advanced-stage alcoholism, about as many score low on factor IV as score high. In other words, in both men and women, reporting the classical symptoms of advanced alcoholism (as in factors I and II) is largely independent of describing oneself as a steady, everyday, long-binge drinker.

The patterns of salient markers for the factor are remarkably similar in the two sexes, but some of the symptom correlations with the factor differ significantly between the two samples. Thus, men who report that they are steady, long-binge drinkers are more likely than women who score high on the factor to report also that they are able to stop drinking, and that they do not drink on weekends only, whereas women in this kind of comparison are more likely than men to report that they drink every day at a specific time. It is as if the steady-drinking woman has a more regimented drinking plan than the steady-drinking man, and that the steady-drinking man is a good deal more sanguine about his ability to control his drinking than is the steady-drinking woman. Worded another way, a woman who is "strung out," so to speak, is less likely to fool herself

Table 4.—Drinking symptoms factor IV: steady, long-binge drinking (congruence .89)

Variable Number	Variable description	Coefficient		
		Women	Men	Diff.
A.	Salient for women and men			
*18	Many days on last binge	71	68	03
*11	Drink every day	63	61	02
*14	Do not drink, sober up and drink again	56	61	−05
*49	Long longest drinking bout	45	47	−02
B.	Salient for women only			
*12	Drink every day at specific time	37	21	16†
C.	Salient for men only			
*33	Able to stop drinking	28	44	−16†
*13	Do not drink weekends only	11	40	−29†
55	Can stop drinking	26	31	−05
D.	Other significant (above .2) correlations with factor in women			
19	Few days between bouts	21	15	06
34	Do not have shakes after bout	23	10	13

*Combined in weighted composite to measure factor.
†Difference significant at the .01 level.

Table 5.—Drinking symptoms factor V: psychosocial benefit (congruence .91)

Variable Number	Variable description	Coefficient		
		Women	Men	Diff.
A. Salient for women and men				
*25	Drinking helps me to be mentally alert	82	78	04
*24	Drinking helps me to work better	80	79	01
*21	Drinking helps me to make friends	46	34	12
*23	Drinking helps me to feel superior	35	32	03
C. Salient for men only				
*22	Drinking helps me to relax	26	31	−05

*Combined in weighted composite to measure factor.

with the belief that she can stop when she wants than a man who is similarily "hooked on booze."

The mean difference between men and women on factor IV are significant at the .01 level, the mean of the men being larger than the mean of the women (table 9). None of the symptoms when considered separately discriminates significantly between the sexes. Again, therefore, as with previously mentioned factors, there is the suggestion that women, on the average, score somewhat lower than men on an aggregate of symptoms which by themselves show no clear gender differences, but when considered together indicate a condition that has been widely accepted as characteristic of severe problems in the use of alcohol.

Psychosocial Benefit

The pattern of symptoms which characterizes this dimension is virtually the same in women as in men. The congruence coefficient is .91. There are no significant differences between the two samples in the factor coefficients.

Thus, regardless of gender and independent of how one describes his condition of alcoholism with respect to severity, physiological reactivity, gregarious needs, and the other symptom clusters isolated in company with this one, there are consistent individual differences in ascribing beneficial effects to the use of alcohol. People scoring high on this factor report that drinking helps them in several ways—to relax, to be mentally alert, to work better, to make friends, to feel superior—whereas persons scoring low deny that alcohol has these benefits.

But women are different with respect to this factor, also. They

tend to score higher on it than men, the mean difference being significant at the .05 level. Women are more inclined than men to ascribe psychosocial benefits to drinking. The suggestion is that women are more inclined than men to regard alcohol as a medicinal agent; or perhaps women have more need to rationalize their drinking in this way.

Controlled Drinking

Through experience we have learned that as the congruence coefficient for a match between factors drops below .70 it becomes increasingly difficult to regard the two factors as representing essentially the same core set of influences. Factor VI, which matches across the samples of men and women with a congruence coefficient of .66, is borderline in this respect. Four of six symptoms that are salient in the factor are common to the two solutions, but the factor coefficients are significantly different in five of these symptoms, as well as in two symptoms that correlate at a low but significant level in the sample of women.

Factor VI seems to represent the fact, or claim, that a person may drink heavily—regularly and habitually—and still hold down a job. Apparently persons who do this, or make this claim, began their drinking with spirits rather than wine or beer. Women who are

Table 6.—Drinking symptoms factor VI: controlled drinking (congruence .66)

Variable Number	Variable description	Coefficient		
		Women	Men	Diff.
A. Salient for women and men				
*32	More than 3 months on present job	67	46	21†
*13	Drink weekends only	61	31	30†
1	First drink was spirits alcohol	42	30	12
*12	Drink every day at specific time	39	62	−23†
B. Salient for women only				
3	Old age when first intoxicated	35	09	26†
C. Salient for men only				
31	Do not miss work when drinking	−03	35	−38†
D. Other significant (above .2) correlations with factor in women				
43	Age took first drink	27	06	21†
6	Drink little beer	20	03	17†

*Combined in weighted composite to measure factor.
†Difference is significant at the .01 level.

characterized by this factor began drinking at a relatively older age than women who score low on the factor, but in the sample of men this item is unrelated to the factor.

Men who score high on this factor report that they do not miss work on account of drinking, but this item is unrelated to the factor in the sample of women.

The mean of the women on the factor is significantly lower (at the .05 level) than the mean of the men. We might suppose that, in part, this is an artifact: because more men than women work, presumably more of them would have held their present job for more than three months. Interestingly, however, this item does not differentiate between the sexes when considered by itself. In fact, the only item in factor VI which does thus discriminate is item 3: women report an age when they were first intoxicated that is more advanced than the age of first being drunk reported by men. This is the reverse of the difference that would be predicted from inspection of the factor pattern. Because men score higher on the factor than women, and this item correlates positively with the factor, it would be predicted that men would score higher on this item. (However, the item was not actually used in computing the factor scores.) Thus, we are led to the conclusion that it is not any particular item which produces the significant difference between the sexes on this factor but rather the combination of the items. In general, these suggest that women are less inclined than men to be involved in habitual heavy drinking while also maintaining their employment.

Marital Difficulty Associated with Drinking

Factor VII can be regarded as defined b two items—"Spouse angry because of drinking" and "Marital problems over drinking,"—both of which have about the same relationship to the factor in the sample of women as in the sample of men. The two items represent a core concern with drinking-related marital problems. The other items which correlate at a significant level with the factor may be taken to indicate the symptoms which are most associated with drinking-related marital difficulty. Comparison of these associated symptoms in the two samples then suggests the ways in which drinking-related marital problems are different for men and women.

Men who report that they have an angry spouse and marital problems on account of drinking also tend to report that they resent others' (presumably often their wives') comments about their drinking but that they are ashamed of their conduct when drinking.

Table 7.—Drinking symptoms factor VII: marital difficulty associated with drinking (congruence .61)

Variable Number	Variable description	Coefficient		
		Women	Men	Diff.
A.	Salient for women and men			
27	Spouse angry because of drinking	75	70	05
29	Marital problems over drinking	66	61	05
B.	Salient for women only			
12	Drink every day at specific time	39	−11	50†
38	Get much sleep when drinking	38	09	29†
39	Drinking getting worse	31	15	16†
19	Few days between drinking bouts	31	−04	35†
C.	Salient for men only			
15	Ashamed of conduct when drinking	09	53	−42†
16	Resent others' comments about drinking	05	45	−40†
D.	Other significant (above .2) correlations with factor in women			
3	Young age when first intoxicated	20	00	20†
4	Drink alone	21	01	20†
6	Drink much beer	20	06	14
32	More than 3 months on present job	24	04	20

†Difference significant at the .01 level.

Neither of these items relates to the factor isolated in the sample of women. On the other hand, women who report that they have drinking-related marital problems also report that they drink regularly, with few days between drinking bouts, that they sleep a lot when they drink, and that they feel their drinking habit is getting worse. In the symptoms that have low but significant correlations with the factor in the sample of women there is suggestion of solitary drinking that began at a relatively early age and which does not yet interfere with the person's work. The general picture we get is that drinking-related marital problems in women are most highly associated with habitual daily and solitary drinking, whereas in men the same problems are most highly associated with shame and resentment concerning others' reactions to one's drinking. It appears, therefore, that in women recognition of marital problems associated with a solitary form of drinking are likely to either cause, or be caused by, a perception that the drinking is getting out of control, whereas among men the marital-problems syndrome is most likely to be linked up with resentment of their wives' nagging about their drinking and yet feelings of shame resulting from drinking (and from the concern of their wives).

Early-Age Drinking

This is a narrow factor in which three of five symptoms that are salient appear as salients in both sexes. The common symptoms represent a dimension of involvement with alcohol at a relatively early age. In the sample of men an item indicating encouragement of the spouse to drink comes into the pattern. This is absent in the sample of women. Here "Drink much beer" correlates at a substantial level with the factor. But not much in general can be said about factor VIII except that it suggests that early involvement with the use of alcohol tends to be independent of advanced-stage alcoholism as represented in some of the other factors.

Overall Differences

The mean differences of table 9 have been mentioned in discussions of the factors. In summary these results show that women score lower than men on the factors which are most widely accepted as indicating advanced-stage alcoholism—the factors measuring the classical syndrome, physiological reactions, and long-binge drinking. Only in respect to the factor indicating solitary drinking (in contrast to gregarious drinking) do women score higher than men in symptoms that are accepted as indicative of advanced-stage alcoholism. The mean differences also indicate that women are more likely than men to report that their drinking is out of

Table 8.—Drinking symptoms factor VIII: early-age drinking (congruence .83)

Variable Number	Variable description	Coefficient		
		Women	Men	Diff.
A.	Salient for women and men			
2	First drink at home	77	69	08
43	Young age at time of first drink	45	56	−11
3	Young age at time of first intoxication	37	53	−16
B.	Salient for women only			
6	Drink much beer	48	22	26†
C.	Salient for men only			
28	Encourage spouse to drink	−04	39	−43†
D.	Other significant (above .2) correlations with factor in women			
13	Drink weekends only	28	06	22†
30	Live alone	21	09	12

†Difference significant at the .01 level.

Table 9.—Drinking symptom factor (means and sigmas) in samples of men and women, and items that discriminate significantly between the two samples

Factor title	Women (N = 362)		Men (N = 1524)		F
	Mean	Sigma	Mean	Sigma	
I. Broad severity	9.57	2.66	10.15	2.79	12.64†
(Drinking cause of loss of employment)					
II. Physiological reaction	9.67	1.59	10.07	1.81	16.00†
III. Gregarious drinking	9.42	1.97	10.17	1.73	51.97†
(Drink at home)					
(Drink little beer)					
(Drink alone)					
IV. Steady, long-binge drinking	9.76	1.63	10.06	1.72	8.62†
V. Psychosocial benefit	10.00	1.75	10.19	1.64	4.04*
VI. Controlled drinking	9.89	.98	10.01	0.93	4.95*
(Older age when first got drunk)					

*Significant at the .05 level.
†Significant at the .01 level.

control and that there are psychosocial benefits to be realized from drinking. In general, the suggestion is that relative to men women have less severe drinking problems but more realistic conceptions of these problems. The prognosis for treatment of alcoholism should therefore be more favorable for women than for men.

OTHER INDICATIONS OF SEX DIFFERENCES IN ALCOHOLISM

In addition to the eight factors which match with a noteworthy degree of congruence across the two samples, a factor is indicated in the sample of women that does not match with any factor determined by objective procedures in the sample of men. The salient symptoms of this factor are listed in table 10.

It can be seen that factor IX is characterized by expressions of fear and shame associated with drinking, mixed with favorable

Table 10.—Drinking symptoms factor IX: Anxiety-shame-guilt (women only)

Marker variables	Coeff.
16. Resent others' comments about drinking	67
15. Ashamed of conduct when drinking	62
37. Have fears after bout	46
39. Drinking getting worse	46
22. Drinking helps me to relax	41
23. Drinking helps me to feel superior	36
3. Young age at time of first intoxication	32

statements about the efficacy of drinking. It thus appears to represent anxiety that is focused more or less specifically on the use of alcohol.

Perhaps the most interesting thing about this factor is that it is independent of other factors in the sample of women, but does not thus stand apart in the sample of men. This suggests that approach-avoidance conflict and anxiety related to alcohol use in women need not be implicated in the expression of other symptom patterns of alcoholism, as represented, for example, by the classical syndrome of factor I or the physiological reactions of factor II. It is as if in the dynamics of alcoholism in women there is an independent component of anxiety that can be high or low whether or not alcoholism is extreme as estimated from other symptoms.

We must also recognize a factor which, in itself, characterizes male-female differences in reporting symptoms that are indicative of alcoholism. When the items of the Drinking Symptom Questionnaire are factored in a sample involving both men and women (Horn and Wanberg, 1969) a factor appears which is defined, in part, by a large loading on a dichotomous variable representing gender. Moreover, the other factors of tables 1 through 8 appear also in this kind of analysis and thus this factor represents influences that are independent of those represented by the factors that match across male and female subsamples. This factor is shown in table 11.

The finding of a separate factor X characterized by the gender difference suggests that women alcoholics should be regarded as different from men alcoholics even when they are being diagnosed in accordance with symptom patterns that are common to both sexes. In practical terms the suggestion is that after a women patient has been diagnosed as, say, high in factor I, the classical syndrome, and high in factor IV, Long-Binge Drinking, we should

Table 11.—Factor X appearing in analysis of sample involving men and women

	Coeff.
Women (vs men)	68
Drink alone	57
Drink at home	50
Drink little beer	47
Older age at first intoxication	40
Resent others' comments about drinking	31
Older age when first drank	27
Drink does not help me to make friends	24

still ask, "Does she score high on the factor which best represents the difference between the way women and men report alcoholism symptoms?" In one sense, to ask this question is to ask whether the woman patient is behaving in accordance with a stereotype or cultural norm. We do not yet know what this means in terms of therapeutic programs, but the fact that this factor exists independently of others makes a prima facie case for a claim that it will make a difference in therapy.

When we consider the content of this dimension we see that it adumbrates the solitary drinking syndrome which has long been described as characteristic of women alcoholics. It suggests that the woman who conforms to this pattern began drinking at a relatively late age, in comparison with men, that she drinks alone, usually in the home, and not for gregarious reasons, and that she is a bit touchy about things that others may say about her drinking. It must be noted, too, that although the factor characterizes male-female differences, it correlates considerably less than unity with the dichotomy representing these differences. Thus, although women are more likely to score high on factor X than men, some women would score very low on it—lower than some men. This indicates that although a solitary-drinker pattern is more common in women than in men, the pattern can be of use in diagnosing men as well as women.

It is of some interest to consider how the factors which appear in much the same form in subsamples of men and women relate to widely used sociological-demographic classifications, such as educational level, income level, and the like. Accordingly the samples were subclassified into the categories of table 12 and comparisons between these categories were made for each of the six factors identified in tables 1-6, the factors being scored in the manner indicated in the previous section. A summary of the results from these analyses is provided in table 13.

The significant differences indicated in table 13 suggest that women with relatively little education tend to score high on the Classical Syndrome, Physiological-Reaction and Gregarious-Drinking factors; that Hispanos, relative to other ethnic groups, tend to score high on the Physiological-Reaction factor; and that women who have never been married tend to score high on the Controlled-Drinking factor.

It may be noteworthy that so few of these analyses by sociological-demographic classifications showed significant differences. Inspection of table 13 indicates that among women significant differences between categories were found in only three of the five classifications. There were significant differences among

Table 12.—Sociological-demographic characteristics

		Women		Men	
		N	%	*N*	%
Years of education					
0- 9	Grade school	48	13	431	28
10-11	Some high school	74	20	247	16
12	High-school graduate	126	35	480	32
13+	Some college	114	32	366	24
Ethnic group					
White		332	92	1290	84
Hispano		14	4	177	12
Black		16	4	56	4
Marital status					
Married		142	44	687	47
Divorced		103	32	378	26
Separated		60	19	234	11
Single		16	5	155	11
Annual family income					
No income		75	21	164	11
Less than $1500		82	23	361	24
$1500 to $3499		84	23	366	24
$3500 to $5499		56	15	357	23
$5500 or more		65	18	276	18
Job status					
Employed		463	30	117	33
Unemployed 1-3 months		716	47	120	33
Unemployed more than 3 months		342	23	122	34

Table 13.—Significant differences among sociological characteristics in drinking symptom factors of subsamples of men and women

Symptom factor*	Education		Ethnicity		Marital		Income	Job
	Women	Men	Women	Men	Women	Men	Men	Men
Classical syndrome	Low					Divorced Separated Single	Low	Short
Physiological reaction	Low	Low	Hispano	Hispano Black		Divorced Separated Single	Low	Short
Gregarious drinking	Low			Hispano		Separated Single		
Controlled drinking				Black Hispano	Single	Married	High	

*There were noteworthy differences in only four of the six factors which matched best across subsamples of men and women. There were significant differences in either subsample on the Steady, Long-Binge or Psychosocial-Benefit factors.

educational levels on three of the factors. Among ethnic groups and marital-status categories, there were significant differences on only one factor in each case. Considering the six factors that were analyzed with respect to five sociological classifications, there were 30 possibilities for a significant difference to emerge in the sample of women, but the analyses suggested significance in only five comparisons. In the sample of men, by contrast, 13 of 30 comparisons suggested significance. This number, too, is smaller than might be expected but still considerably larger than the number of significant differences suggested by the analyses in the sample of women. Looked at in another way, these results suggest that scores on the eight symptom factors do not vary in a noteworthy way among women of different income levels, or different levels of employment (as compared with unemployment), and they vary only infrequently among women of different ethnic groups and marital conditions.

There are several possible explanations for this finding. Perhaps the most provocative is a postulate that the symptom factors are largely irrelevant to the description of alcoholism in women. It is reasonable to suppose that our conceptions of alcoholism have developed primarily from observations of men. From this assumption, the symptoms which we have accepted as defining the domain of verbal concerns about problems with the use of alcohol could be appropriate primarily only for men. According to this argument, although women can answer the questions indicating these symptoms, and thus can appear to be telling us about their problems associated with the use of alcohol, the items in fact do not relate pointedly to the real problems they are experiencing in this regard. If this were true, the resulting symptom factors would not relate in a significant manner to other variables which were related to alcoholism generally or to different forms of alcoholism—i.e., variables such as are represented by the sociological classifications of tables 12 and 13.

An obvious difficulty with this reasoning is that there is little compelling reason to suppose that the sociological classifications relate to alcoholism (or different forms of alcoholism) in ways that are different from those indicated for women in the results of table 13. Indeed, it can be argued that some of the sociological classifications, such as Job Status and Family Income (which, in the U.S.A., are still largely determined according to the status of men—e.g., a woman's husband or her father), are largely irrelevant for women. Thus, significant differences in these classifications would not be expected even when the symptom factors provided highly reliable measures of dimensions that were very relevant for

women. In partial support of this kind of reasoning, we found that the reliabilities and distribution characteristics of the symptom factors were, if anything, somewhat better in the sample of women than in the sample of men. Nevertheless, it is interesting, and potentially quite worth while, to continue to work with the possibility that because, historically speaking, alcohol consumption is an activity in which men have dominated, we may at this point in the 20th century be using implicit definitions of alcoholism which really are not particularly relevant for describing alcoholism in women. Our observation in this regard should not be construed as ruling out the possibility that our present-day implicit definitions of alcoholism are not very relevant for men either.

SUMMARY

Putting together these various glimpses into the nature of the problems women bring to an alcoholism treatment center, we see first that there is no one type of female alcoholic. As do men, women differ in respect to several distinct symptom clusters. It is likely that these represent distinct types of conditions to be treated. Considering the complexity of the various possible permutations of symptom patterns, it might be best to begin the diagnosis of a woman by considering how she scores with regard to the problems which best characterize the difference between men and women who enter a treatment facility. Is the woman well characterized by the solitary-drinking syndrome, in which the use of drugs other than alcohol is likely to be prominent? This "typical" pattern among women will not provide a complete description of any woman alcoholic and will be the antithesis of the accurate description of some women. To get a more accurate description it is necessary to determine how the woman scores on the factors which are common to men and women. If the woman is married, for example, one could expect that she would score high on the marital difficulties factor, in which case there would be indications of sustained drinking in which alcohol serves somewhat the same function as a soporific. But the evidence here indicates, also, that a woman could very well be married and have a gregarious pattern of drinking which had developed to a point where she recognized many of the symptoms of the classical syndrome. Not infrequently such a woman would be of the lower educational and economic classes and would work outside the home. The treatment of this problem should probably be rather different from the treatment for a married women showing the symptoms of solitary drinking and drug use. In evaluating these various symptom clusters the clinician

should also remain aware of the fact that the connotations of the symptoms are somewhat different for women than for men. Finally, too, we should remain open to the possibility that we have not yet gained a really proper focus on the problems of describing and diagnosing alcoholism in women.

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